
Xeriscaping Series # 12

Made Possible Through A Grant From The Bureau Of Reclamation

Gardening in a Water Challenged Environment

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Gardening in a Water Challenged Environment

What we have

Gardening in a Water Challenged Environment

What we want

Gardening in a Water Challenged Environment

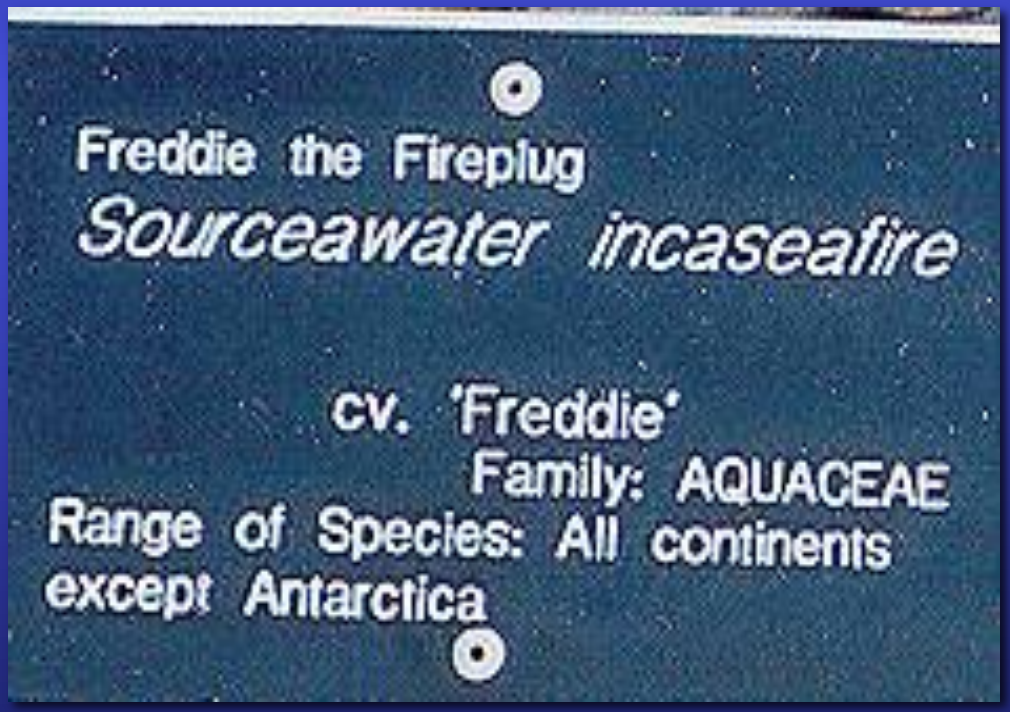
- The Issues
  - **Supply**
  - **Cost**
  - **Plant Health**
  - **Associated Costs**

Gardening in a Water Challenged Environment

- The Issues
  - **Supply**

Gardening in a Water Challenged Environment

- The Issues
  - **Cost**



Gardening in a Water Challenged Environment

- The Issues
  - **Plant Health**

Gardening in a Water Challenged Environment

- The Issues
  - **Associated Costs**

How much water is 1 inch?

- One inch of water on 1 acre of land is 27,154 gallons (3630 cubic feet)

How Much Is Water Worth?

- In the West, Water Flows to Money
- How Do We Have Create Beauty and Function and Still Promote Wise Water Use?

Jordan Valley Water Conservation District Demonstration Gardens

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Web site is

http://www.slowtheflow.org/

The Traditional Landscape

- This represents a typical Salt Lake Valley subdivision yard where Kentucky bluegrass is the majority of the landscape. The Traditional Landscape is the baseline to compare water consumption to the other landscapes.

The Traditional Landscape

The Traditional Landscape

The Traditional Landscape

The Modified Traditional Landscape

- This offers three main changes to the Traditional Landscape: less lawn, an alternative lawn (buffalo grass), and a retro-fitted drip irrigation system.

The Modified Traditional Landscape

The Modified Traditional Landscape

The Modified Traditional Landscape

The Perennial Landscape

- This emphasizes an abundance of year-round color using perennial flowers. This landscape also has a small section of Kentucky bluegrass lawn.

The Perennial Landscape

The Perennial Landscape

The Perennial Landscape

The Harvest Landscape

- This features edible flowers, fruit and nut trees, a raised herb garden, a fescue lawn and a creeping thyme lawn.

The Harvest Landscape

The Harvest Landscape

The Harvest Landscape

The Woodland Landscape

- This has an informal feel and will ultimately evolve into a shady, dry garden. This landscape has no lawn. After the establishment period, this landscape should require only one watering per month.

The Woodland Landscape

The Woodland Landscape

The Woodland Landscape

The High Desert Landscape

- This desert theme showcases Utah native and climate adapted plants that require little or no additional water. It has no irrigation system; all watering is done by hand. When trees and shrubs are established, they receive no supplemental water. New plants are hand watered for 1 - 2 years.

The High Desert Landscape

The High Desert Landscape

The High Desert Landscape

Vegetable Display Bed

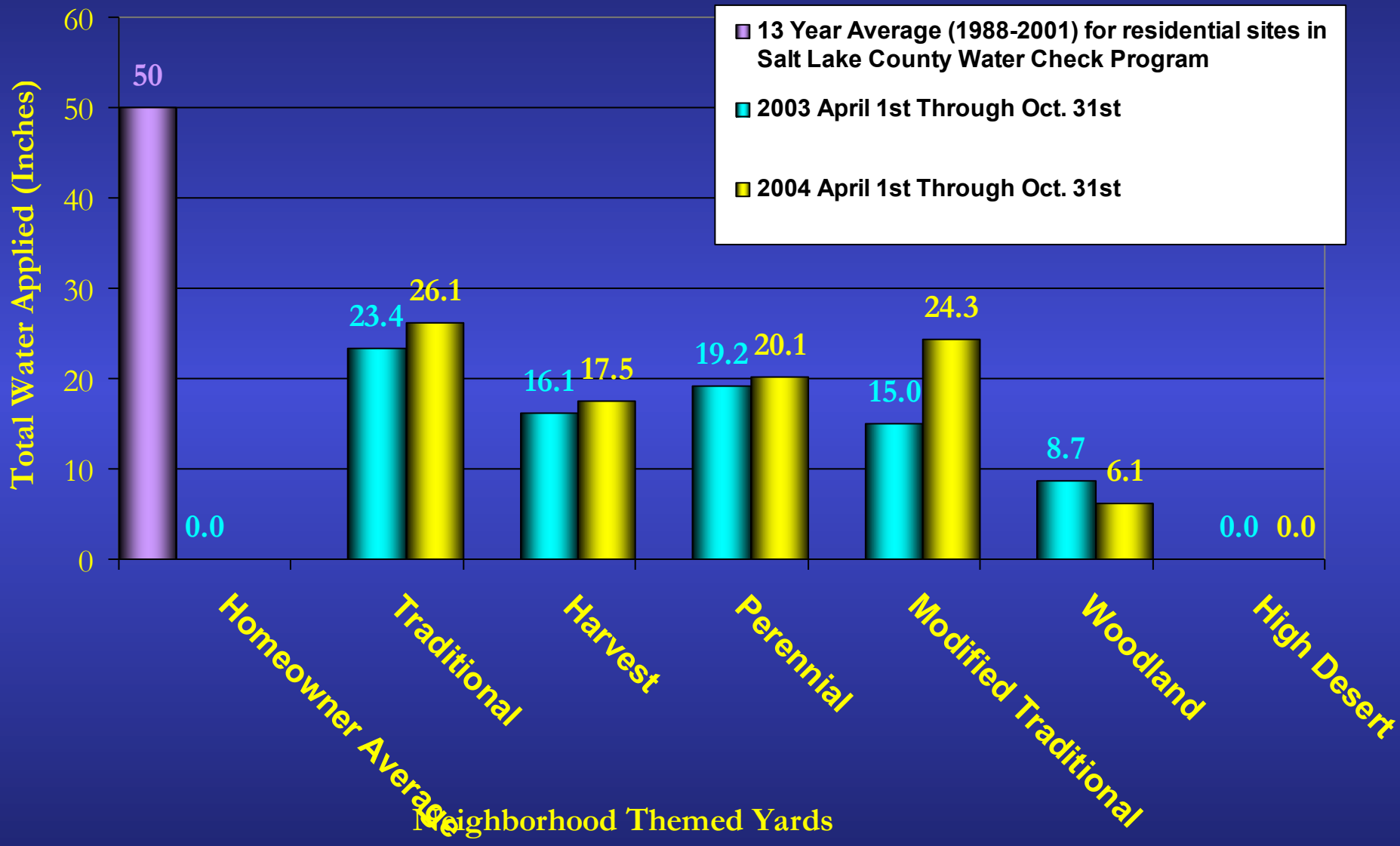
Vegetable Display Bed

Ornamental Displays

Ornamental Displays

Other Designs

JVWCD Demonstration Garden Total Water Applied to Each Landscape for 2003 and 2004



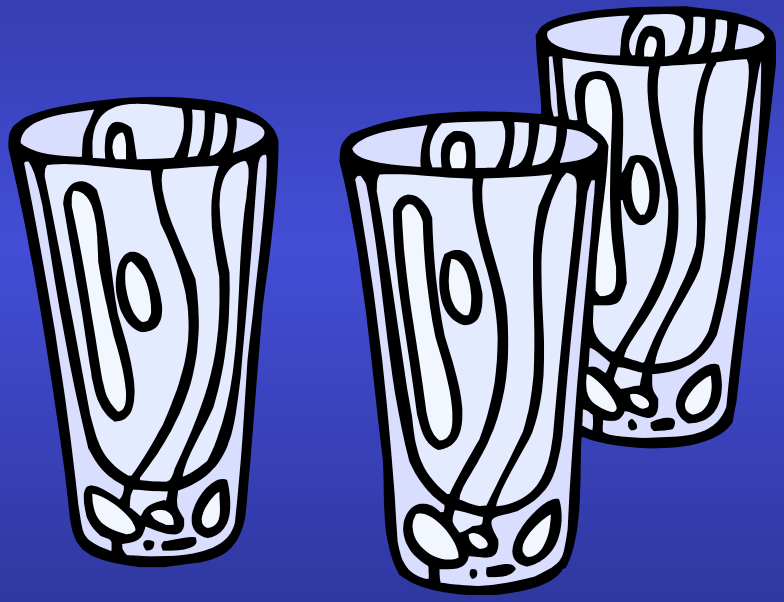
- **Intermountain lawns require about one and one half inches of water each week in mid-summer.**

- During the cool spring and fall, this drops to 1/2 to 1 inch per week.

- **Most homeowners apply twice as much water to their lawn as they should.**

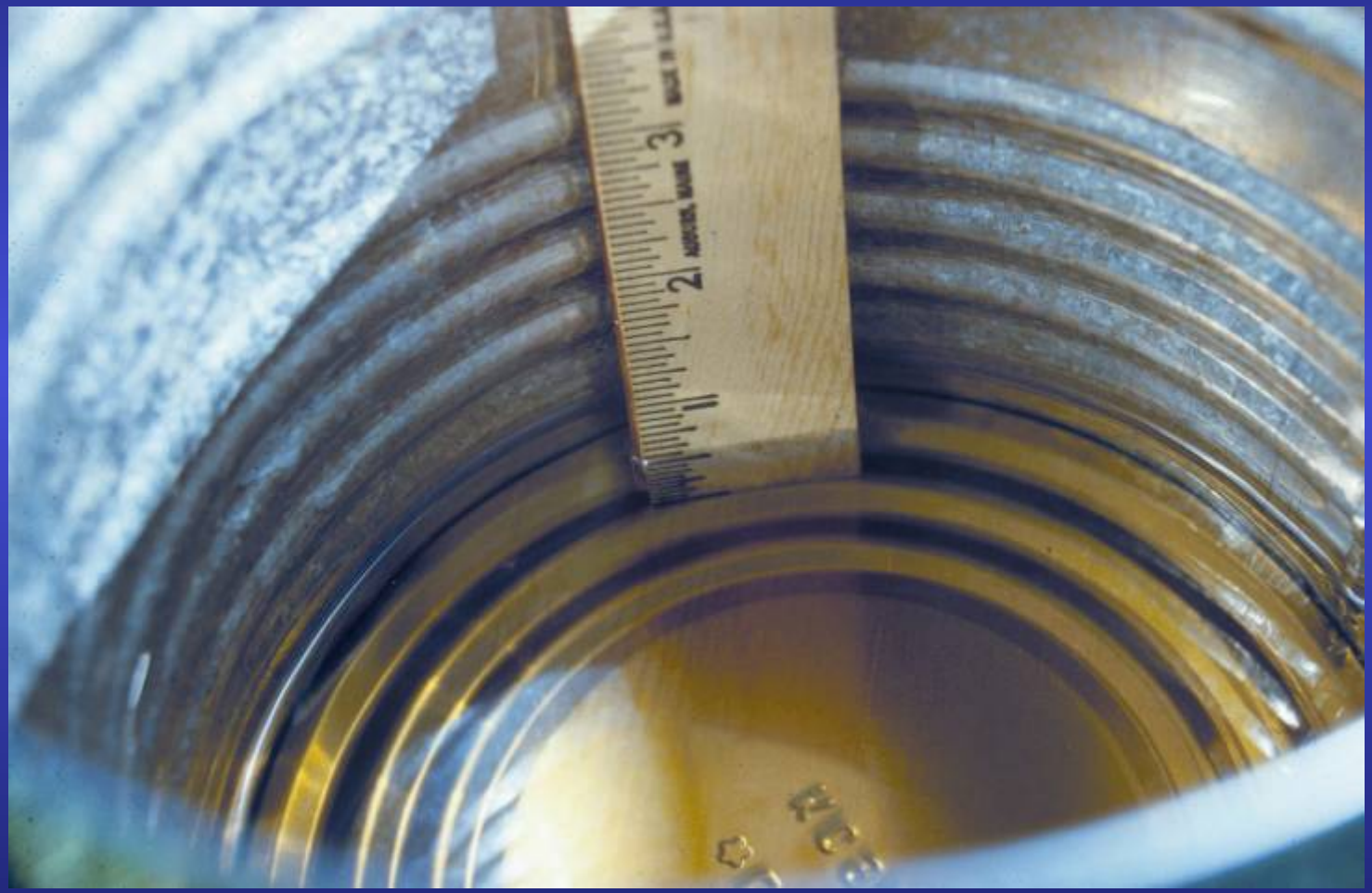
- **By following a simple guideline, homeowners can cut summer water use on lawns by at least one-half.**

Time vs Amount



- First, measure the sprinkler output. Use six straight-sided cans (at least 3 inches deep) located at different distances from the sprinkler head.

- Turn the water on for 30 minutes. Measure the sprinkler output by averaging the amounts in the six cans. Your amount will be in terms of inches in 30 minutes.



- Measure the water penetration depth with a screwdriver or soil probe. Test the soil in several places. The screwdriver is harder to push in dry soil than in damp soil.

- **Ideally water should penetrate 10 to 12 inches.**

- **Third, determine how frequently the lawn needs water each week.**

- If the lawn requires 1.5 inches each week and you applied one-half inch in 30 minutes which watered to a depth of ten inches, you need to water three times each week.

- If you applied one-half inch in 30 minutes and water penetrated only 2 1/2 inches, you need to apply enough water to wet the soil to a depth of 10 inches.
- This means you need to water for two hours (1/2 hour = 2 1/2 inches; 2 hours = 10 inches).

- **The best time of day for applying water is during the morning or evening hours. Water pressure is generally best in the morning hours.**

- **Reset automatic sprinkler systems for different water outputs as needed to save water.**

- Footprinting can be determined by walking across a lawn and watching to see how long it takes for footprints to disappear. If the grass has had adequate water, footprints will hardly be noticed.

Practical Turf Areas

- A water-efficient landscape has practical and functional turf areas

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Practical Turf Areas

- It includes turf areas required for family recreation or other desires

Practical Turf Areas

- Turfgrass is important in many landscapes

Practical Turf Areas

- Turfgrass is the single greatest area for irrigation misuse in the landscape

Practical Turf Areas

- In the Intermountain Area, most turf must be irrigated or dries and dies out

Practical Turf Areas

- Drought-tolerant turf species will survive extreme drought

Practical Turf Areas

- These varieties turn brown under drought conditions, but green up when water is applied

Practical Turf Area

- To reduce turf grass irrigation
  - Hydrozone your landscape and locate turf areas based on water use

Blue Gramma Grass

Kentucky Bluegrass

Tall Fescue

Perennial Ryegrass

Turtle Turf

Blue Gramma Grass

Buffalo Grass

Drought Tolerance VS Consumptive Water Use

- How Much Water Does my Grass Use?

Drought Tolerance VS Consumptive Water Use

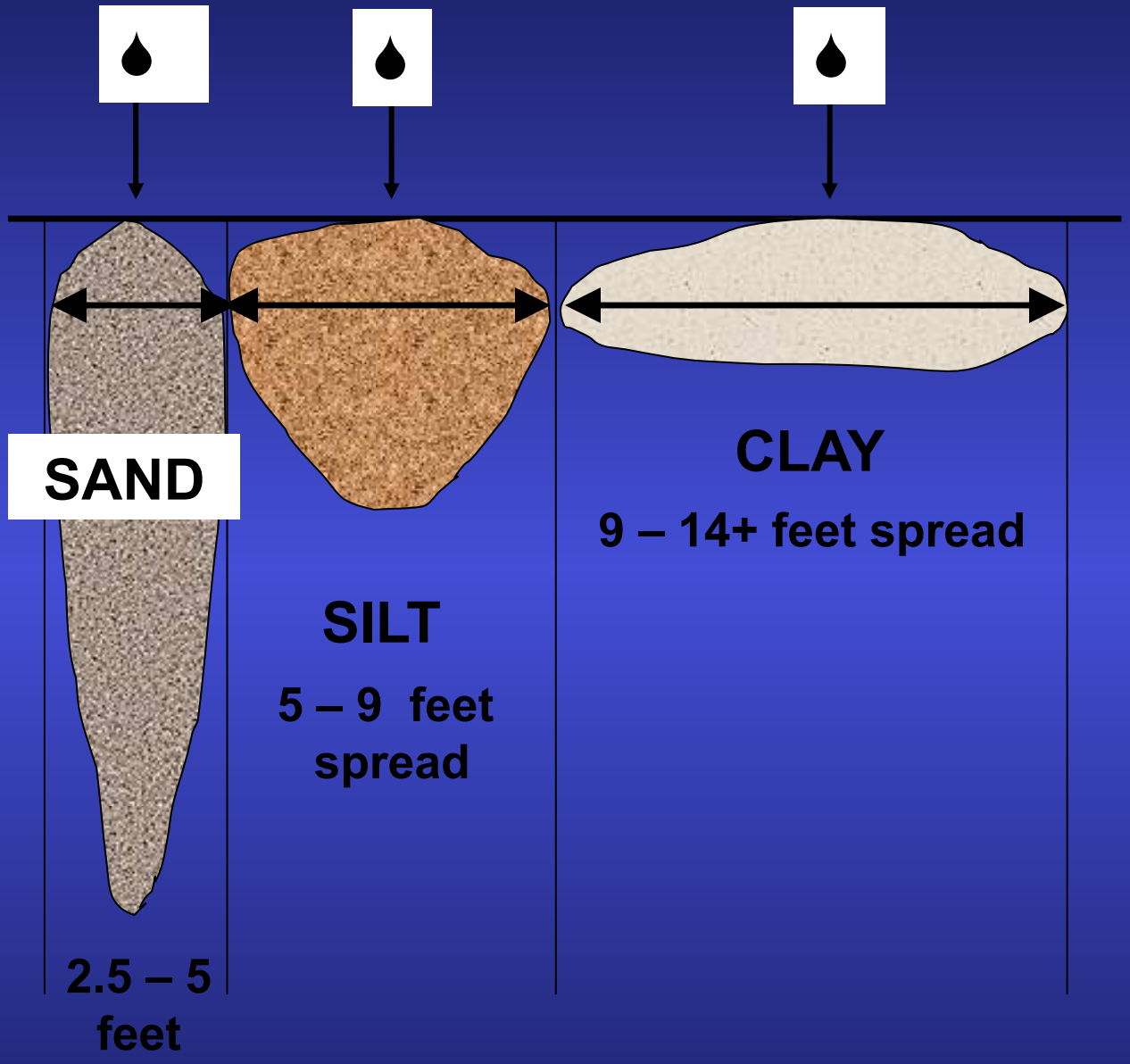
- Drought Tolerance is the Ability of a Plant to Survive a Period of Time With Little or No Water

Drought Tolerance VS Consumptive Water Use

- Consumptive Water Use Is How Much Water The Plant Needs To Stay Green And Grow Well

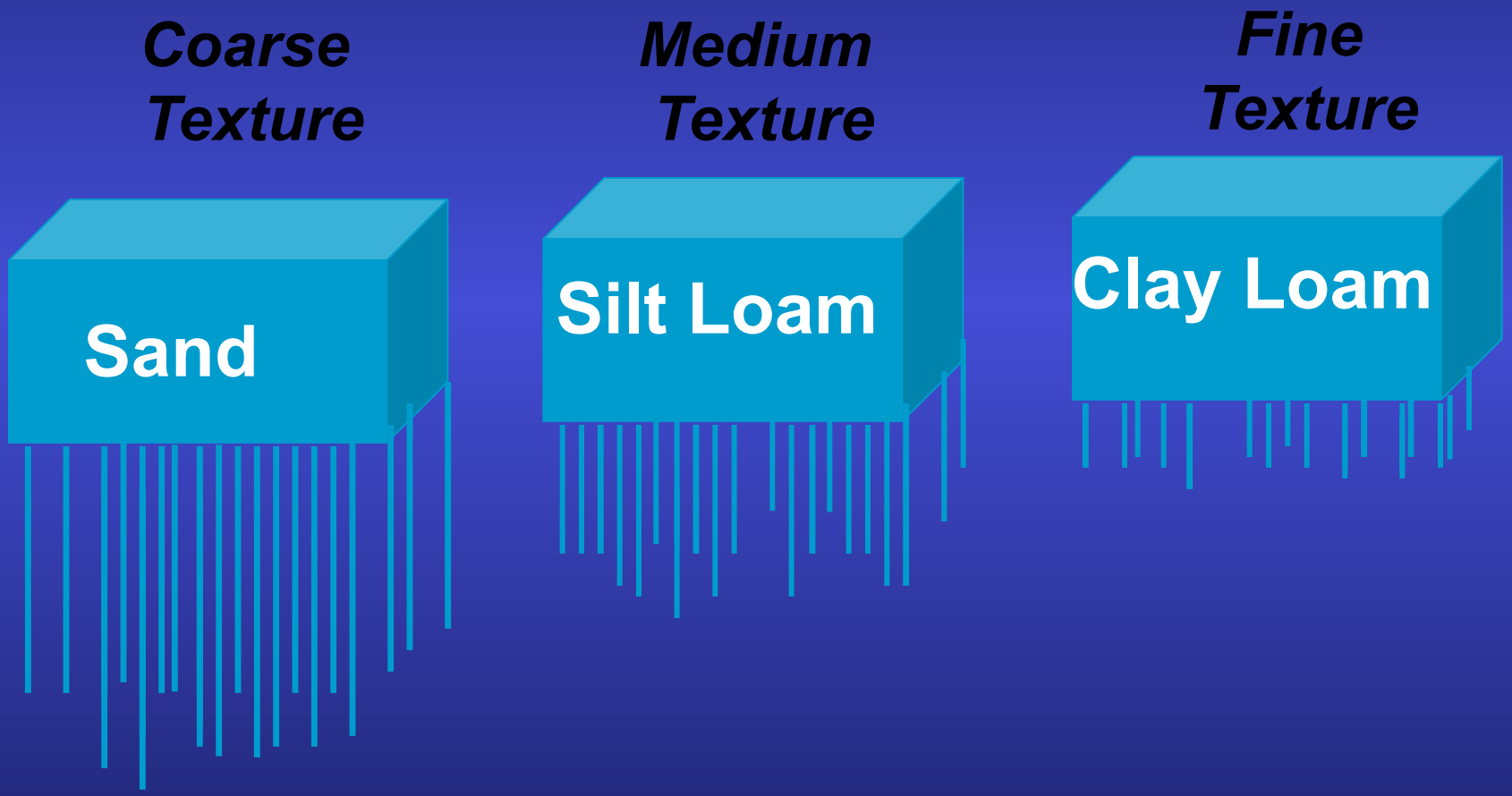
Efficient Irrigation

- Irrigate turf based on true water requirements

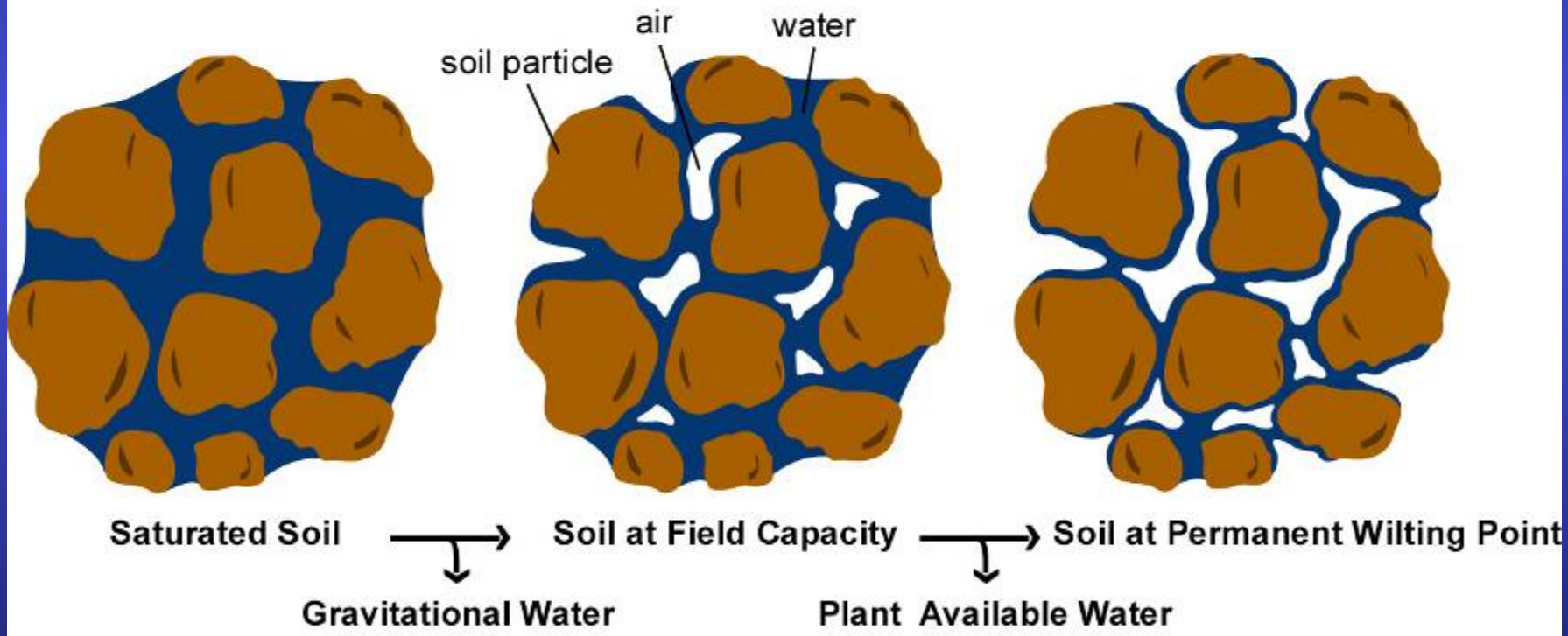


Water spreads differently in different soil textures

Soil texture and drainage



Available water



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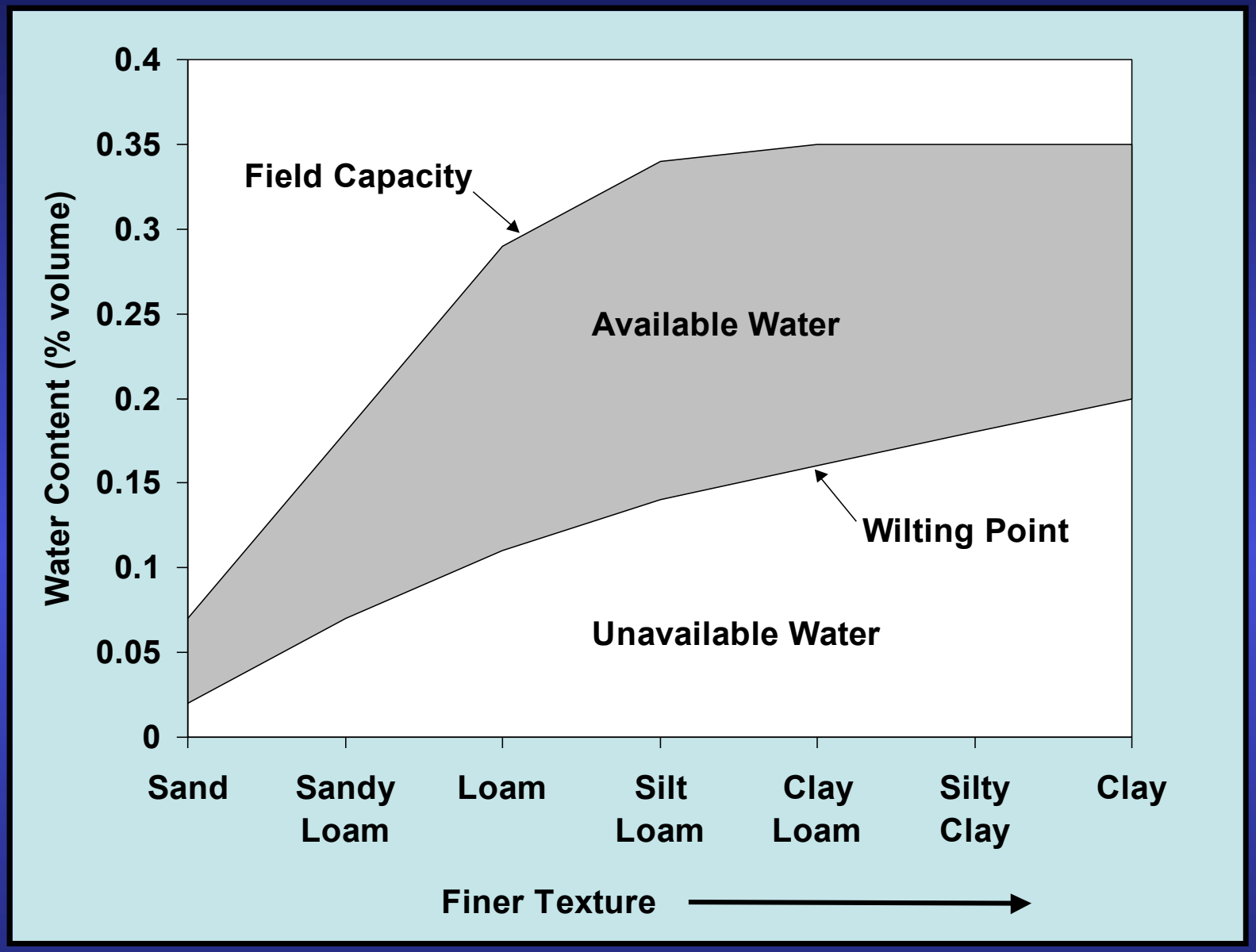

Available water

Efficient Irrigation

Efficient Irrigation

- Properly designed, installed, maintained and operated sprinkler and drip irrigation systems apply water efficiently to landscape plants

Efficient Irrigation

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- Plant selection determines which system to use

Efficient Irrigation

- Often a combination of drip for trees and shrubs, and sprinkler for turf and ground covers works best

Efficient Irrigation

- Maintain systems in good working order

Efficient Irrigation

- Check systems frequently for operating efficiency, repair leaks, clear plugged sprinkler heads and emitters, and correct uneven water applications

Efficient Irrigation

- Do not overwater. Runoff wastes water and leaches nutrients

Efficient Irrigation

- Overwatering saturates plant roots and kills them

The End


For More Information Contact
Your Local Utah State University
Extension Office


Check Them Out At
http://extension.usu.edu/